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10/556,280

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Sukru Yilmaz

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DUANE MORRIS, LLP  
IP DEPARTMENT  
30 SOUTH 17TH STREET  
PHILADELPHIA, PA 19103-4196

EXAMINER

ALLI, IYABO

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2877

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/556,280	<b>Applicant(s)</b> YILMAZ ET AL.	
	<b>Examiner</b> IYABO S. ALLI	<b>Art Unit</b> 2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5,7,10-12,14 and 15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5,7,10-12,14 and 15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 November 0205 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>04/15/2007</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments, see Remarks on pages 5-8, filed on June 27, 2008, with respect to the rejection(s) of claim(s) 1-13 under 112 2<sup>nd</sup> paragraph and 103 (a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of **Papen et al.**

2. Acknowledgement is given to Amended claims 1, 4, 7 and 10-12, Cancelled claims 6, 8, 9 and 13 as well as New claims 14 and 15.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims **1-5, 10-12, 14** and **15** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hashimoto** (5,309,214) in view of **Papen et al.** (5,379,310). ('Papen')

**As to claim 1, Hashimoto** discloses a refractometer prism **12**, on a measuring surface of which a sample **13** to be analyzed is placed (Column 5, lines 37-41 and Fig. 2); a light source **1 & 2** for illuminating the sample **13**, and a receiver **15** for receiving light **14** reflected from the sample **13** (Column 5, lines 48-50 and Fig. 2).

**Hashimoto fails to disclose** wherein the light source comprises a plurality of discrete light sources; and an optical diffraction grid for reflecting light from each of the discrete light sources into a single light point, wherein the light from each of the discrete light sources having different angle of incidence at the optical diffraction and same diffraction angle.

However, **Papen** teaches wherein the light source **10** comprises a plurality of discrete light sources **12** (Column 3, lines 51-53 and Fig. 1); and an optical diffraction grid **16** for reflecting light from each of the discrete light sources **12** into a single light point, wherein the light from each of the discrete light sources **12** having different angle of incidence at the optical diffraction and same diffraction angle (Column 3, lines 54-61 and Figs. 2 and 3).

It would have been obvious to one skilled in the art at the time of the invention to include the diffraction grid of **Papen** in the refractometer of **Hashimoto** in order to vary the amount of intensity illuminating the object under test so that comparison techniques can be carried out when comparing resulting data to stored standard values.

**As to claim 2, Hashimoto** in view of **Papen** discloses all of the claimed limitations as applied to Claim 1 above **except for** the light source comprising a plurality of white light lamps arranged at preset spaced locations next to one another.

Although **Hashimoto** in view of **Papen** fails to disclose the light being white lamps, it would have been obvious to one skilled in the art at the time of the invention to substitute the white lamps for any suitable light source, as long as it provides a

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constant, balanced light in a refraction system, so that less filtering devices have to be used in the system, reducing the cost of unnecessary components being utilized.

**As to claim 3, Hashimoto** in view of **Papen** discloses all of the claimed limitations as applied to Claim 1 above **except for** that the light source comprises a plurality of colored LEDs arranged at preset spaced locations next to one another.

Although **Hashimoto** in view of **Papen** fails to disclose the light being colored LEDs, it would have been obvious to one skilled in the art at the time of the invention to substitute the colored LEDs for any suitable LED source in order to utilize more than one wavelength in the system, allowing different colored beams to be coupled in the fiber bundle but not before the desired time and let multiple reflection angles be detected for calibration techniques to be carried out.

**As to claim 4, Hashimoto** in view of **Papen** discloses all of the claimed limitations as applied to Claim 3 above **except for** wherein an interference filter, by means of which the light of the LEDs are filtered to a desired wavelength, is arranged downstream of each LED.

However, **Papen** teaches wherein an interference filter **90**, by means of which the light of the LEDs are filtered to a desired wavelength, is arranged downstream of each LED (Column 8, lines 61-66 and Fig. 8).

It would have been obvious to one skilled in the art at the time of the invention to include the arrangement of the filters of **Papen** in the refractometer of **Hashimoto** in

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order to only allow suitable wavelength into the fiber bundle, improving the color distribution within the wavelengths being illuminated on the sample under test.

**As to claim 5, Hashimoto** in view of **Papen** discloses all of the claimed limitations as applied to Claim 1 above **in addition Hashimoto** discloses the receiver **15** is a one-dimensional CCD photodiode cell (Column 5, lines 48-50 and Fig. 2).

**As to claim 10, Hashimoto** in view of **Papen** discloses all of the claimed limitations as applied to Claim 8 above **in addition Hashimoto** discloses a said direct vision prism **12** with dispersing property (dispersion prism) is provided instead of the said optical diffraction grid (Column 8, lines 55-63 and Figs. 2 and 6).

Although, **Hashimoto** in view of **Papen** fails to use the term 'prism', it would have been obvious to one skilled in the art at the time of the invention to substitute the measuring member **Hashimoto** for the prism in order to achieve the predictable results of dispersing different wavelengths onto the sample under test.

**As to claim 11, Hashimoto** in view of **Papen** discloses all of the claimed limitations as applied to Claim 8 above, **in addition Hashimoto** discloses a monochromatic lens is provided instead of the said optical diffraction grid (Column 8, lines 55-63 and Figs. 2 and 6).

Although, **Hashimoto** in view of **Papen** fails to use the term 'monochromatic lens', it would have been obvious to one skilled in the art at the time of the invention to substitute the measuring member **Hashimoto** for the monochromatic lens, in order to

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achieve the predictable results of dispersing different wavelengths onto the sample under test.

**As to claim 12, Hashimoto** in view of **Papen** discloses all of the claimed limitations as applied to Claim 8 above **in addition Hashimoto** discloses said transmission diffraction grid with dispersing property is provided instead of the said optical reflection diffraction grid (Column 8, lines 55-63 and Figs. 2 and 6).

Although, **Hashimoto** in view of **Papen** does not use the term 'optical reflection diffraction grid', it would have been obvious to one skilled in the art at the time of the invention to substitute the measuring member **Hashimoto** for the optical reflection diffraction grid, in order to achieve the predictable results of dispersing different wavelengths onto the sample under test.

**As to claim 14, Hashimoto** in view of **Papen** discloses all of the claimed limitations as applied to Claim 8 above **except for** herein each light source in the plurality of discrete light sources emit different color light.

Although **Hashimoto** in view of **Papen** fails to disclose the emitted light being different colors, it would have been obvious to one skilled in the art at the time of the invention to substitute the colored LEDs for any suitable LED source in order to utilize more than one wavelength in the system, allowing different colored beams to be coupled in the fiber bundle but not before the desired time and let multiple reflection angles be detected for calibration techniques to be carried out.

**And as to claim 15, Hashimoto** in view of **Papen** discloses all of the claimed limitations as applied to Claim 8 above **in addition Hashimoto** discloses herein each light source **1** and **2** in the plurality of discrete light sources are activated individually or together (Column 5, lines 6-9 and Fig. 2).

5. Claim **7** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Hashimoto** (5,309,214) in view of **Papen et al.** (5,379,310), as applied to claim 6 above, and further in view of **deJong et al.** (4,063,822). (**'Papen'** and **'deJong'**)

**As to claim 7, Hashimoto** in view of **Papen** discloses all of the claimed limitations as applied to Claim 6 above **except for** lenses, which optimize the transmission of the light through the said interference filters at the same time and make possible a more defined effective wavelength and full width at half-maximum, are provided to improve the coupling of the light into the discrete beam paths.

However, **deJong** teaches lenses **3** and **4**, which optimize the transmission of the light through the said interference filters **5** and **6** at the same time and make possible a more defined effective wavelength and full width at half-maximum, are provided to improve the coupling of the light into the discrete beam paths (Column 8, lines 10-17 and Fig. 5).

It would have been obvious to one skilled in the art at the time of the invention to include the lenses of **deJong** in the refractometer of **Hashimoto** in view of **Papen** in order to couple the illuminated light so that the beams are received by the fiber bundle



in a continuous and synchronized order, minimizing the detection time when a complete cycle is carried out.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**4,699,511** which teaches a guided wave band edge sensor apparatus and method for determining the curvature or deformation of a sensing interface.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to IYABO S. ALLI whose telephone number is (571) 270-1331. The examiner can normally be reached on M-Fr: 7:30am- 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Toatley can be reached on 571-272-2059. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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IYABO S. ALLI

Examiner

Art Unit 2877

August 13, 2008 /I. S. A./

/L. G. Lauchman/

Primary Examiner, Art Unit 2877